APPENDIX A

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The paragraph beginning at page 60, line 34 has been amended as follows:

Semiconductor nanocrystals can be utilized to label various target biomolecules for use in various types of secondary interrogations. Such investigations generally involve conducting an additional analysis once a binding ~~a binding~~ complex between two or more biomolecules have already been formed. The array in such investigations typically bears a biomolecule that captures a target molecule in preparation for a secondary interrogation. Suitable targets in this type of study include, but are not limited to, nucleic acids (*e.g.*, DNA, RNA), proteins, or antibodies.

IN THE CLAIMS:

Claims 11, 12, 14, 15, 25 and 26 have been canceled and the following claims have been amended as indicated without prejudice or disclaimer.

1. (Once amended) An analytical method of detecting a ligand of interest in a sample, comprising:

(a) providing a first plurality of antiligands immobilized on a solid support at positionally distinct locations thereon to provide a first array, wherein the plurality of antiligands comprises a first antiligand capable of binding specifically to a first ligand of interest;

(b) contacting the array with a sample containing or suspected of containing the first ligand, wherein the first ligand is linked through a linker to a first semiconductor nanocrystal before, during or after the contacting, under conditions in which the first ligand, if present, binds specifically to the first antiligand to form a first complex;

(c) optionally, removing unbound ligand from the array; and

(d) identifying the location of the first complex by detecting and, optionally, quantifying the presence in the first complex of the first semiconductor nanocrystal, detection of the first semiconductor nanocrystal indicating the presence of the first ligand of interest.

3. (Once amended) The method of claim 1, wherein

~~(a)~~ the sample contains a second ligand linked to a ~~detectably distinct~~ second semiconductor nanocrystal which is detectably distinct from the first semiconductor nanocrystal, wherein the second ligand is capable of binding specifically to a second immobilized antiligand to form a second complex; and

~~(b)~~ identifying comprises determining which location or locations of the array include the first complex, the second complex or the first and second complexes by detecting and, optionally, quantifying simultaneously or sequentially the presence in the first and second complexes of the first and second semiconductor nanocrystals.

8. (Once amended) The method of claim 6, wherein the first ligand ~~bears~~ is linked to a single first semiconductor nanocrystal.

9. (Once amended) The method of claim 7, wherein the first ligand and the second ligand ~~bear~~ are linked to a single first and a single second semiconductor nanocrystal, respectively.

19. (Once amended) The method of claim 16, wherein

~~(a)~~ the sample contains a second ligand linked to a detectably distinct second semiconductor nanocrystal that is capable of binding specifically to a second immobilized antiligand to form a second complex; and

~~(b)~~ identifying comprises determining which location or locations of the array include the first complex, the second complex or the first and second complexes by detecting and, optionally, quantifying simultaneously or sequentially the presence in the first and second complexes of the first and second semiconductor nanocrystals.

21. (Once amended) The method of claim 20, wherein

~~(a)~~ the sample contains a second ligand linked to a detectably distinct second semiconductor nanocrystal that is capable of binding specifically to a second immobilized antiligand to form a second complex; and

~~(b)~~ identifying comprises determining which location or locations of the array include the first complex, the second complex or the first and second complexes by detecting and, optionally, quantifying simultaneously or sequentially the presence in the first and second complexes of the first and second semiconductor nanocrystals.

40. (Once amended) An analytical method, comprising:

(a) providing a first plurality of antiligands immobilized on a solid support at positionally distinct locations thereon to provide ~~a first~~ an array, wherein the plurality comprises a first antiligand that is a binding partner of a first ligand;

(b) contacting the first array with a sample containing or suspected of containing the first ligand, whereby the first ligand, if present, and the first antiligand interact to form a first complex;

(c) labeling the first ligand in the first complex with a first semiconductor nanocrystal; and

(d) identifying which location of the array includes the first complex by detecting the presence therein of the first semiconductor nanocrystal, detection of the first semiconductor nanocrystal indicating the presence of the first ligand.

41. (Once amended) The method of claim 40, wherein:

~~(i)~~ the first plurality of antiligands comprises a second antiligand that is a binding partner of a second ligand;

~~(ii)~~ the sample contains or is suspected of containing the second ligand, whereby ~~such that~~ the second ligand and the second antiligand interact to form a second complex;

~~(iii)~~ step (c) comprises labeling the second ligand in the second complex with a second semiconductor nanocrystal that is detectably distinct from the first semiconductor nanocrystal; and

~~(iv)~~ step (d) comprises determining which location or locations of the array include the first complex, the second complex or both the first and second complexes by detecting the presence therein of the first and second semiconductor nanocrystals.

42. (Once amended) The method of claim 40, wherein the first ligand comprises a first member of a first binding pair and the semiconductor nanocrystal is linked to a second member of the first binding pair ~~by~~ through a linker.

APPENDIX B

PENDING CLAIMS

1. (Once amended) An analytical method of detecting a ligand of interest in a sample, comprising:

(a) providing a first plurality of antiligands immobilized on a solid support at positionally distinct locations thereon to provide a first array, wherein the plurality of antiligands comprises a first antiligand capable of binding specifically to a first ligand of interest;

(b) contacting the array with a sample containing or suspected of containing the first ligand, wherein the first ligand is linked through a linker to a first semiconductor nanocrystal before, during or after the contacting, under conditions in which the first ligand, if present, binds specifically to the first antiligand to form a first complex;

(c) optionally, removing unbound ligand from the array; and

(d) identifying the location of the first complex by detecting and, optionally, quantifying the presence in the first complex of the first semiconductor nanocrystal, detection of the first semiconductor nanocrystal indicating the presence of the first ligand of interest.

2. The method of claim 1, wherein the linker comprises two members of a binding pair, a first member attached to the first ligand and a second member attached to the first semiconductor nanocrystal.

3. (Once amended) The method of claim 1, wherein

the sample contains a second ligand linked to a second semiconductor nanocrystal which is detectably distinct from the first semiconductor nanocrystal, wherein the second ligand is capable of binding specifically to a second immobilized antiligand to form a second complex; and

identifying comprises determining which location or locations of the array include the first complex, the second complex or the first and second complexes by detecting and, optionally, quantifying simultaneously or sequentially the presence in the first and second complexes of the first and second semiconductor nanocrystals.

4. The method of claim 1, wherein the antiligands are nucleic acid probes and the first ligand is a target nucleic acid.

5. The method of claim 3, wherein the antiligands are nucleic acid probes and the first and second ligands are target nucleic acids.

6. The method of claim 4, wherein the first ligand is linked to the first semiconductor nanocrystal prior to the contacting step.

7. The method of claim 5, wherein the first and second ligands are linked to the first and second semiconductor nanocrystals prior to the contacting step.

8. (Once amended) The method of claim 6, wherein the first ligand is linked to a single first semiconductor nanocrystal.

9. (Once amended) The method of claim 7, wherein the first ligand and the second ligand are linked to a single first and a single second semiconductor nanocrystal, respectively.

10. The method of claim 4, wherein the linker comprises two members of a binding pair, a first member coupled to the target nucleic acid and the second member coupled to the semiconductor nanocrystal.

11-12. Canceled.

13. The method of claim 4, wherein the nucleic acid probes are allele-specific nucleic acid probes.

14-15. Canceled.

16. The method of claim 1, wherein the plurality of antiligands are proteins.

17. The method of claim 16, wherein the ligand is a protein.

18. The method of claim 16, wherein the antiligands are antibodies.

19. (Once amended) The method of claim 16, wherein

the sample contains a second ligand linked to a detectably distinct second semiconductor nanocrystal that is capable of binding specifically to a second immobilized antiligand to form a second complex; and

identifying comprises determining which location or locations of the array include the first complex, the second complex or the first and second complexes by detecting and, optionally, quantifying simultaneously or sequentially the presence in the first and second complexes of the first and second semiconductor nanocrystals.

20. The method of claim 1, wherein the antiligand is a component of a tissue specimen.

21. (Once amended) The method of claim 20, wherein

the sample contains a second ligand linked to a detectably distinct second semiconductor nanocrystal that is capable of binding specifically to a second immobilized antiligand to form a second complex; and

identifying comprises determining which location or locations of the array include the first complex, the second complex or the first and second complexes by detecting and, optionally, quantifying simultaneously or sequentially the presence in the first and second complexes of the first and second semiconductor nanocrystals.

22. The method of claim 20, wherein the antiligands are selected from the group consisting of proteins, nucleic acid targets, oligosaccharides and combinations thereof, and the ligands are independently selected from the group consisting of antibodies, nucleic acid probes, lectins, aptamers and combinations thereof.

23. The method of claim 22, wherein the antiligands are distinct target nucleic acids and the ligands are nucleic acid probes.

24. The method of claim 22, wherein the antiligands are proteins and the ligands are proteins.

25-26. Canceled.

27-39. Non-elected.

40. (Once amended) An analytical method, comprising:

(a) providing a first plurality of antiligands immobilized on a solid support at positionally distinct locations thereon to provide an array, wherein the plurality comprises a first antiligand that is a binding partner of a first ligand;

(b) contacting the first array with a sample containing or suspected of containing the first ligand, whereby the first ligand, if present, and the first antiligand interact to form a first complex;

(c) labeling the first ligand in the first complex with a first semiconductor nanocrystal; and

(d) identifying which location of the array includes the first complex by detecting the presence therein of the first semiconductor nanocrystal, detection of the first semiconductor nanocrystal indicating the presence of the first ligand.

41. (Once amended) The method of claim 40, wherein:

the first plurality of antiligands comprises a second antiligand that is a binding partner of a second ligand;

the sample contains or is suspected of containing the second ligand, whereby the second ligand and the second antiligand interact to form a second complex;

step (c) comprises labeling the second ligand in the second complex with a second semiconductor nanocrystal that is detectably distinct from the first semiconductor nanocrystal; and

step (d) comprises determining which location or locations of the array include the first complex, the second complex or both the first and second complexes by detecting the presence therein of the first and second semiconductor nanocrystals.

42. (Once amended) The method of claim 40, wherein the first ligand comprises a first member of a first binding pair and the semiconductor nanocrystal is linked to a second member of the first binding pair through a linker.

43. The method of claim 41, wherein the second ligand comprises a first member of a second binding pair and the second semiconductor nanocrystal is linked to a second member of the second binding pair.